

App. F. IX-4

1928.9.

File No. 52-28

Previous References

Seri 52-28 (1-2)

(Seri)

Serial Nos. 3-8

Later References

Provision

2-32(15)

General and Revenue Secretariat.

Serial Nos. Six

Part B for Nov. 29.

SUBJECT

Report of work done by Mr. Sham-suddin
Khan Assistant Superintendent of Seri-
-culture on deforestation in Japan.

S 4551 & A. 11.29.

To

The Dir Sec.

States that Government have read

with interest the

Mr

In reply please refer to

No. D4-2359/27-28

Encls:- 2.

DEPARTMENT OF INDUSTRIES AND COMMERCE.

4573

REV. SECRETARY
 8 DEC. 1928
 Dated, Bangalore, 6th Decr-.., 1928

OFFICE OF THE DIRECTOR,

Dated, Bangalore, 6th Decr-.., 1928

- 7 DEC. 1928

C. RANGANATHA RAO SAHIB, Esq., B.A., B.L.,

Director of Industries and Commerce in Mysore,

Bangalore (India.)

To

N. Rama Rao Esq., B.A., B.L.,

Seri. 52-28-3

Secretary to Government - Development Departments,

B A N G A L O R E.

SIR,

N With reference to your letter No.D.5554/Seri. 52-28-2 dated 28-11-'28 calling for the submission of the progress report of Mr. K Shamsuddin Khan, I have the honour to forward herewith for the perusal of Government a copy of a brief report of work done by Mr. K. Shamsuddin Khan, B.A., Asst. Superintendent of Sericulture (on deputation) during the months of August and September, received with the Sericultural Superintendent's letter No.2493 dated the 16th November 1928 with copy of my letter to that officer. As regards further action to be taken on the several points mentioned in your letter under reference, I shall submit a detailed report on receipt of a reply from the Superintendent of Sericulture.

Subd for perusal.

18.10.12.28

I have the honour to be,

Sir,

Your most obedient servant,

Subd
 2 Marginal notes subd
 for perusal
 A.K.G.

Ranganatha Rao Sahib
 DIRECTOR. in charge

20/12 (absent on leave)

(1st Member)

23 12 28

(2)

Serial
No.

note on p. 3

2) See marginal notes filed for perusal
(20) 11/12
23/12

3/ The report of Mr. Shamsuddin Khan is also interesting.

4/ He says that soap is made from pupa oil. The Industrial Chemist may be asked to consider if any such use can be made of the pupa here.

5/ Let us get, as suggested by the Development Secretary, full particulars of the Japanese basin. Mr. Shamsuddin Khan can report in what respect this is better than our basins. If the cost is not heavy, we may even get a sample basin. Have we automatic cooker arrangements in our basins?

6/ He refers to brushing with ^{thin} their brushes. Has this observation any lesson for us?

7/ Silk waste spinning. - We have this problem under consideration. We may ask Mr. Shamsuddin Khan to report what a small plant for this purpose would cost.

8/ The chemical and mercury-lamp tests mentioned by Mr. Shamsuddin Khan may be required to be carried out in our Filature and the results reported.

9/ We have introduced cold storage arrangements in Mysore and Chennapatna. Is the plant referred to by Mr. Shamsuddin Khan better than what we have? If so, the next plant we buy, may be of the type referred to by Mr. Shamsuddin Khan.

10/ We may try on a small scale the mulberry pruning methods mentioned by Mr. Shamsuddin Khan.

Serial
No.

to be 2.0 yln report

11) Mr. Shamsuddin Khan may be asked to report in detail as to how temperature and humidity are regulated in rearing cocoons. perhaps by electric ^{heaters} ~~fication~~ and spraying of water: vide page 6 of the Report.

para 21

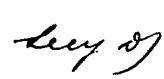
12) Mr. Shamsuddin Khan refers to all types of reeling machines which he saw in the Filature attached to the Sericultural Industrial School at Matsumoto. He may be asked to report if there is any simple ^{and in-} expensive plant which can be owned and used by each rearer of worms. ~~be~~

para 30.

13) I hope Mr. Shamsuddin Khan will bring information of value to fight flacherie.

Muk
27/12/28
14) Please put up off to D. H. C.
WJ
28/12/28

15) Subd with a draft.

16.7.1.29.  16) For approval
Key of  14.1.29

17/1

17) same

WJ
20/1/29

4

Letter no 576469 25th January 1929
to the Dir. of D. H. requesting the Dir. to
take necessary action on the several
points referred by Mr. Shamsuddin Khan.

Secy. GEN. & REV. SECRETARIAT
20 JAN. 1929

Serial
No.

5

Letter no. Dy-2359-27 of 19th Feb. 1929
from the Dir. Dy. forwarding
copy of Seris' report letter indicating
the action taken re the use of copper
sulfate on musketry range, &c. and
stating that further particulars will
be sent on receipt letter from Mr.
Shamsuddin Khan.

6

Letter no. Dy-2359-27 of 19th Feb. 1929 from
the same officer forwarding copy of
brief report done by Mr. Shamsuddin
Khan during the period 16.10.28 to
15.11.28.

First

(18) Seen by the Member.

Letter no. Dy-2359-27 of 8th Aug. 29

from the Dir. Dy. Submitting a final
report recd by Mr. Shamsuddin Khan
with ref - 481.4.

11 Sent for information.

12 The report is very interesting. After
Mr. Shamsuddin Khan returns,
we might have a set of ten
basins of the Japanese type set
up, with regulation rails (to
avoid re-railing.) & compare its
performance with that of the Mysore
Basin and French Basin sets.

Ind N. d. 9/8

12 Please let me see this letter
(marked A on its p.c.d.).

Ind N. d. 16

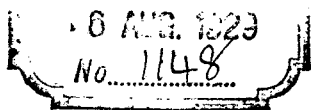
128 no

S. A.

REV. SECRETARY
2-MAR. 1929
CHANCE.

Serial
No.

played /



13. Subd with refer. 58-4.

14. 14. 8. 29.

1st member /

mg 14/8/29

mg 16.8.29

mg

17.8.29

Subd with a draft as noted
by the Secy on Serial 7.

18. 2.9.29.

Secy Secy in personal

9/9

mg 9/9/29

mg

29.10.29

mg

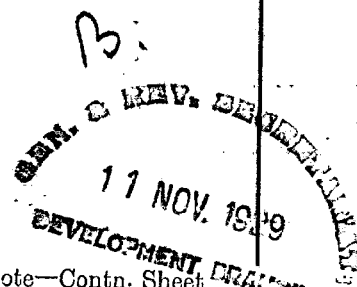
mg 29/10/29

8.

D. 4551/ dated 8/11/29.

To The Director etc

States that he may after Mr Shamasuddin Khan's
return to duty, have a set of 10 basins of the Japa
type set up with regulation rules, and compare
its performance with that of the Mysore Basin
and French Basin sets.



6
Enclomment
Date 4573
Cen 52-28-3

Letter No. 23 dated 1-10-1928 from Mr. K. Shamsuddin Khan, B.A., Asst. Superintendent of Sericulture (on Deputation), Koto Sanshi Gakko, Nishigahara, Tokyo-Taka, Japan, to the Superintendent of Sericulture in Mysore, Mysore.

I submit herewith for favour of information report of my work from 13-8-28 to 12-9-28.

Diary of work from 13-8-28 to 12-9-28. by
Mr. K. Shamsuddin Khan, B.A.

13-8-28 to 21-8-28. Attended to College libraries and studied literature concerning Genetics, Pathology, and Silk trade. The College was closed for Summer Vacation and there was no rearing or other practical work. However, I attended the libraries of the College.

2) 22-8-28 to 25. Visited the Imperial Sericultural College at Noda and studied the work carried on there. This Institution is on parallel lines with that of the Sericultural College at Tokyo. It has in addition a moderately big plant for silk-waste spinning and a small plant for manufacture of "Rayon" and a small plant for manufacture of soap from pupa oil.

3) Rearing. - The most interesting experiment under progress was rearing of silk-worms of the eighth generation derived parthenogenetically. All the eight generations were parthenogenetic. This series of experiments is yet under progress and its results will be published next year. The characteristics observed were the small number of eggs, irregular hatchings of eggs, small worms, small cocoons, and small moths.

4) Filature. - This branch of the College has all types of reeling machinery from the Foot-reeling machine to the most up-to-date Filature basins. Use is made of only the present day type basins. As compared with French and Italian basins Japanese basins are simple and more efficient in work, though in appearance Italian and French ones are far better. Cooking of cocoons is highly specialized and only automatic cookers are employed. Rushing is done with thin brushes.

5) Silk waste spinning. - The machinery employed here is of

British

English make and is supposed to be up-to-date. The silk waste is first bleached by 'boiling method' in copper cauldrons containing soap solution. The cauldrons receive steam from boilers. Steam is played upon the silk waste till dirt is removed and uniform colour is attained by the waste. The silk waste is then transferred to a rotating drum in which washing of silk waste is effected. It is then transferred to a drying room. The dried waste is then submitted to the action of beaters or 'Stampedes.' It is subsequent to this that 'Combing' operation starts. Mostly circular combing machinery is employed. The waste is combed six times in different sized combs before it is ready for the next operation. The next operation is twisting. The twist is adjusted to requirements. The final operation is that of ~~turning~~ 'gasing', i.e., the thread is passed over gas flame to remove 'nibs' and 'slugs'. It is then wound round spindles and is then ready for weaving.

b) During the process of manufacture temperature and humidity by pumping are kept constant, air passing through water chambers.

7) Weaving. - This is taught to students as part of a course in the College. There is nothing of special interest in this section.

8) Moth Examination. - This is carried on for obtaining layings for use of School and for experimental purposes. The ordinary method of examination is employed.

9) Chemical Section. - This section is well organised under Dr. Inne who has by means of laborious research found out a chemical method of ~~xxxxxxx~~ determining quality of cocoons to be used in filatures. The method is as follows. From the lot to be used or purchased representative cocoons are picked. The cocoon is cut into two halves. .1 Gm. of it (i.e., shell) is weighed and put in a tube. To this is added .01 Gm. of potassium hydroxide and .1 C.C. of copper sulphate solution of .1% strength. The result and colour of the liquid is compared with standardised colours correlating with the quality of cocoons. This invention is likely to revolutionise methods and modes of

marketing

Might be
experimented
with in
our Filature
N.R.

marketing cocoons. Dr. Inarve told me that one of the filatures had already taken an advance step by putting the method into practice. Mercury-lamp 'tests' researches have also been made by Dr. Inarve and advance work is being done. The 'frivolescence' of ^{cocoons} under mercury-lamp gives different shades of colours in dark room for different grades of cocoons which is correlated with 'phospherdine' in the silk layer. Dr. Inarve thinks that this may have a great commercial bearing in future.

(10) Cold Chambers. - There are three chambers of 8' x 8' x 8' capacity. The fittings are of most up-to-date plant. Ammonia plant is in operation. The working of the plant costs between Y. 3 to 4 (i.e., Rs 3/12 to Rs 5/-) a day. The entire installation cost the College Y. 10,000. A plant of this type would be very useful in Mysore for preservation of eggs on a large scale.

(11) Artificial Silk Plant. - The method employed is Nitro-Cellulose method. The plant is kept as an educational equipment. I visited the Experimental Station at Neda.

(12) Mulberry. - This is cultivated on Megori and Tekajari - jitute methods, i.e., bottom pruning and middle pruning systems. In tree system middle height and 'hand' system are employed. There is a good nursery also which supplies seedlings to raiyats.

(13) Moth Examination. - This is done on a large scale. The liquid of the crushed moth is submitted to the 'Centrifuge' to get good results in examination. This Institution helps the sericulturist, supplies eggs, and gives advice.

(14) From Neda I went to Nagano the head quarters of the Nagano Province. The Experimental Station of this place has five branches, viz., physiological, genetical, sericultural, chemical, and pathological. The work of this Station is purely experimental. Executive and administrative functions are carried on by its branch at Neda.

(15) Chemical Section. - Intensive work is being done to find out effects of various chemicals on the health of silk-worm. Import ~~and~~ among them is Calcium Citrate. Mulberry leaf smeared with its solution is fed to silk-worms and consequent physiological and ^{Anatomical} ~~autometical~~ effects are studied. Work in 'frivolescence' of cocoons under mercury-lamp in 'dark room' is also being studied closely.

Effects

Effects of manures on leaf quality and relation of manures to diseases is also being studied.

16) Genetical and Physiological Sections. - Effects of light and darkness on silk worms under rearing are being studied minutely. So far it has been demonstrated that light produces 'hibernating eggs' and 'darkness' produces 'unhibernating eggs.' Besides this effects of darkness and light on silk-worms reared in constant humidity and temperature are studied. All rooms are kept at constant humidity and temperature by means of Chamber's Ammonia Plant.

17) Moth Examination. - Percentage of pebrine warranting rejection of layings is 1. Pebrine has been controlled very much. Flacherie is yet common.

18) The working of Chamber's Ammonia Plant here is between Y. 4 to 5 including cost of Ammonia and of electrical energy.

19) Mulberry. - Experiments to determine the most suitable varieties of mulberry that can resist drought are being carried. Results are not yet definitely known. The variety of mulberry commonly cultivated in Nagano Province is Nezumigaeshi (that which turns away rats.) This variety is 'dwarf' and many branched with many and comparatively deep roots. This suits the mountainous region well. Roso is also cultivated to some extent. In this Province even on middle heights of mountains mulberry is planted.

20) Raiyats' rearings. - Stands and trays and 'mounting' apparatus are standardised. ^{Rearing} ~~Increasing~~ rooms sanitation is well cared for. Suitable spacing is given to worms during rearings. Worms are fed properly, i.e., not by hours, but are fed ~~by~~ in response to 'appetite.' Great care is taken during early stages and moulting periods. Temperature and humidity are well regulated. How? Mounting of worms is done then. Generally straw rope and collapsible 'chandrikes' are employed. The average yield of summer crops is 70 lbs. to 75 lbs. of cocoons per 100 layings as per ^{our average} ~~enquiries~~ ^{is 40 lbs;} ~~enquiries~~ ^{but our} ~~assistance~~ ^{is poliovolta} ~~and puts into practice the knowledge.~~ ^{- a naturally} ~~This has encouraged the scientific and other workers in the sericultural field considerably. Eggs are obtained from licensed grain manufacturers whose grainages are under expert control and under~~ ^{smaller worms}

Government regulations. Seed cocoon producers are supplied eggs from Experimental Stations or from their branches. The staff, viz., Experts and Inspectors tour in Sericultural Villages and inspect the several grainages, seed cocoon rearings, and ordinary rearings. Defects are remedied, advice given, and assistance rendered. Periodically lectures are arranged for and lectures on practical sericultural subjects are delivered. The grainage work is on lines obtaining in other Stations.

21) On my way back to Tokyo I got down at Latsumotô, a place noted for its cold-storage plants. I visited the Sericultural Industrial School the only one of its kind in Japan. The Filature branch of this School is very attractive and interesting. It contains all types of reeling machinery. In one type the jettebouts are driven by a belt encased in a rectangular box. The jettebouts are fixed by slightly moving springs. Another special feature of this Institution is its weaving branch where hand-spun silk (from silk waste) is woven. The hand-spun xxx fabric is very fine and is beautifully woven. In fact fabrics are so nice that at first sight it is hardly possible to distinguish them from fairly high class 'silks'. The Principal of this Institution ~~who~~ who has done advanced work in this line hopes to successfully compete commercially with non-silk high grade products price for price. All work is done by students under expert guidance.

22) Mulberry. The mulberry plantations are largely Tokagerijitate and Iukenshiki.

23) Rearings. - Pure breeds and hybrids are reared. Branch feeding is commonly practised. During spring season peasants also largely adopt this practice as it has been found to be very economical.

24) Grainage work. - The operations for examination are crushing of Moths, preparing of slides, and examinations. Two slides are prepared for each moth. Bad layings were rejected on the spot. In this Station also percentage of pebrino warranting rejection is 1;

25) I next visited branch of Sangyo Shikinjo.

mulberry

to save labour
NR

20) Mulberry Plantations. - Negari-jitate and Tekageri-jitate, i.e., dwarf and middle systems are commonly advised and practised.

21) Rearings. - This Station is noted for producing large quantities of seed cocoons which are sent to other Stations also. Experiments in feeding silk worms from leaves from different heights of mulberry plants and from 'middles', 'bushes', from cultivated and uncultivated forms were under progress. Temperature in rearing rooms is controlled by electric heaters and humidity by spraying of water through automatic discharge tubes. It is difficult to find another Station so well advanced in scientific rearing. The seed cocoons produced here are famous and are generally used as 'Nucleus seed cocoons.'

22) Cold Chambers. - No other station in Japan, it is said, has such good cold chambers as Eastumoto. There are altogether twelve chambers as indicated below, with varying temperatures for

12 25°	11 20°	10 15°	9 10°	8 5°	7 0°
6 25°	5 20°	4 15°	3 10°	2 5°	1 6°

Each Room is 6' x 6' x 7' and each has a separate door with a thermometer.

definite purposes, viz., for hibernation of eggs, for storage of mulberry leaves, and for storage of mulberry cuttings for propagation purposes. It is possible to go down to 5° also, but there is no practical necessity for it.

23) Rearing and grainage work are carried on lines similar to those obtaining in Nagano. Sericultural Institutes are divided into two categories, viz., educational, experimental, and administrative. The three biggest Institutions have the status of a College and are under the control of Education Ministry. The Experimental and Administrative Institutions and others are under the control of Agriculture and Forest Ministry. The work of the Colleges is to impart Education in higher sericulture besides doing research work. The experimental stations do experimental and research work and help sericulturist in every way calculated

to improve the industry, i.e., supplying seed to seed cocoon rearers, control of seed manufactures, inspection of crops, technical guidance supply of mulberry seedlings, finding suitable varieties of mulberries and races of silk worms for each district or locality and for each season, inspection of guilds, advice, and lectures. The sericultural institutions are a real and dynamic factor in the organisation and progress of the biggest industry of the Japanese Empire.

31) 26-8-28 to 12-9-28. - I attended the College and commenced Bacteriological and pathological work under Prof. Tateiwa. After doing preliminary and general technical work in bacteriology I have commenced research work in flacherie under Prof. Tateiwa's instructions.

This is at present our most important silk worm disease

31) Due to bad seasonal conditions resulting from unusual, heavy, and continuous rains during August mulberry gardens suffered and our College gardens had not leaves enough and hence no general rearings were arranged for. Only small rearings in genetical and pathological branches were done by Professors concerned. I followed experiments in genetical and pathological sections.

32) After finishing work in flacherie I shall take up work in pebrine, physiological work, Anatomical work, and research work in Chromosomes. Prof. Tateiwa has kindly promised to render all help and guidance.

33) The silk market remained practically stationary during the 2nd week of September, but market for silk waste revived and it is expected that silk waste prices will be on the increase.

Sd/- K. Shamsuddin Khan,
Asst. Supdt. of Sericulture
on Deputation in Japan.

No. 2493

Office of the Superintendent of
Sericulture in Mysore, Exhibition Buildings,
Mysore, dated the 16th November 1928.

Copies of the above submitted to the Director of Industries and Commerce in Mysore, Bangalore, for favour of information.

H. S. S. S.
Superintendent of Sericulture.

MS

6th Decr., 8

- 7 DEC. 1928

Dear Mr. Shamsuddin Khan,

With reference to your letter No.23 dated 1-10-'28 submitting a brief report of work done by you for the period 13-8-28 to 12-9-28, I am desirous to request you to kindly arrange to send details of dimensioned drawings of a big plant for silk waste spinning and a small one for manufacture of "Rayon" and another for manufacture of soap from pupa oil with names of manufacturers for the information of the Director. We may also buy Japanese Basins if you think that they are simple and more efficient in work. Information may kindly be furnished immediately.

Yours sincerely,

H.K.R.

Mr. K. Shamsuddin,
Koto Sanshi Gakko,
Nishigahara,
Tokio - Japan.

A.K.C.

SUBJECT.....

Diary No. of letter replied to.....

General and Revenue Secretariat

the

192

Date of issue.....

25-11-29

Signed by

Mr. C. E. Navroth

st of enclosures.....

Copied by.....

Examined by.....

3 copies

Section Seri.

File No. 52-28.

Serial No. 4

No. 8.7646

To

The Director of P.R.

Sir,

With reference to
 your letter no. D₄-235727
 dated 7th Dec. 1928 for
 forwarding a copy of the brief
 report of work done by Mr.
 K. Shamsuddin Khan,
 Asst. Supt. of Sericulture
 on deputation during the
 months of August and
 September 1928, I am di-
 rected to state that Govt.
 have read his report ~~and~~
 with interest. I am
 pleased to request

15
You to be so good as to
take necessary action on the

several points referred to in
the report, as indicated below:-

(i) Manufacture of soap from
pupa oil: The Industrial
Chemist may be asked to
consider if any such use
can be made of the pupa in Mysore.

(ii) Filature: Full ^{particulars} ~~details~~ of
the Japanese basin may be
obtained, ^{whether, and if so} ~~with a report~~ in what
respects, the Japanese basin is
better than the Mysore domestic
basin. If the cost is not heavy,
a sample basin may be obtained
for our department if it is considered
advantageous. Information may be
kindly ~~be~~ furnished if the Mysore Basins
have got automatic cooker arrange-
ments, as in the case of the Japanese basin,
and if the Brushing System referred to
by Mr. S. Kham may be advantageously copied
by the Ser. Dept. here.

(iii) Silk waste spinning: Mr. Shanmugan

GENERAL AND REVENUE
SECRETARIAT.

(Continuation sheet draft form.)

16

Khan may be asked to report what a small plant for this purpose would cost.

(iv). Chemical Section: The chemical and mercury lamp tests mentioned by Mr S. Khan may be required ^{to be} ~~to be~~ carried out at the Filature in Mysore, and the results reported.

(v) Cold Storage Chambers:

Information may be obtained if the cold storage plant referred to by Mr S. Khan is better than that introduced recently into the ^{framing} ~~filature~~ at Mysore. If so, the next plant to be purchased may be of the type referred to by Mr Khan.

(vi) Nursery: The nursery pruning material referred to in the report may be tried on a small scale.

(vii) Rearing of Cocoons:

Mr. Shamsuddin Khan
may be asked to report in
detail as to how temperature
and humidity are regulated
in ^{the} rearing ^{room} ~~cocoons~~.

(viii) Reeling machines: Mr.

Shamsuddin Khan refers to
all types of reeling machines which
he saw in the Filature at Matsunoto.

He may be asked to report if there is
any simple and inexpensive plant
which can be owned and used by each
rearer of worms in Mysore.

(ix) Results of Mr. Shamsuddin Khan's
study about the measures to fight
flacherie may be reported for the
information of Govt.

I have to

cc
H/1

For Secy

18.7.1.29



GOVERNMENT OF HIS HIGHNESS THE MAHARAJA OF MYSORE

General and Revenue Secretariat

No. S. 7646 / Ser' 52-28-4

Dated, Bangalore, 25th Jan'y 1929

From

N. RAMA RAO, Esq., B. A., B. L.,

Secretary to the Government of His Highness the Maharaja of Mysore,

Development Departments.

To

C. Ranganatha Rao Sahib, Esq., B.A., B.L.,

Director of Industries and Commerce in Mysore,

Sir,

B a n g a l o r e.

With reference to your letter No. D₄-2359-27 dated 7th December 1928 forwarding a copy of the brief report of work done by Mr. Shamsuddin Khan, Assistant Superintendent of Sericulture on deputation during the months of August and September 1928, I am directed to state that Government have read this report with interest. I am to request you to be so good as to take necessary action on the several points referred to in the report as indicated below:-

(i) Manufacture of soap from pupa oil.

The Industrial Chemist may be asked to consider if any such use can be made of the pupa in Mysore.

(ii) Filature.

Full particulars of the Japanese basin may be obtained, reporting whether and if so in what respects, the Japanese basin is better than the Mysore Domestic Basin. If the cost is not heavy a sample basin may be obtained for the Department if it is considered advantageous. Information may be kindly furnished if the Mysore Basins have got automatic cooker arrangements as in the case of the Japanese basin, and if the Brushing system referred to by Mr. Shamsuddin Khan may be advantageously copied by the Sericultural Department here.

(iii) Silk waste spinning.

Mr. Shamsuddin Khan may be asked to report what a small plant for this purpose would cost.

P.T.O.

(iv) Chemical Section.

The chemical and mercury lamp tests mentioned by Mr. Shamsuddin Khan may be tried at the Filature in Mysore and the results reported.

(v) Cold Chambers.

Information may be obtained if the cold storage plant referred to by Mr. Shamsuddin Khan is better than that introduced recently into the grainage at Mysore. If so, the next plant to be purchased may be of the type referred to by Mr. Shamsuddin Khan.

(vi) Mulberry.

The mulberry pruning methods referred to in the report may be tried on a small scale.

(vii) Rearing of cocoons.

Mr. Shamsuddin Khan may be asked to report in detail as to how temperature and humidity are regulated in the rearing room.

(viii) Reeling machines.

Mr. Shamsuddin Khan refers to all types of ^{reeling} ~~spinning~~ machine which he saw in the Filature at Matsumoto. He may be asked to report if there is any simple and ^{expensive} ~~inexperience~~ plant which can be owned and used by each rearer of worms in Mysore.

(ix) Results of Mr. Shamsuddin Khan's study about the measures to fight flacherie may be reported for the information of Government.

I have the honour to be,

Sir,

Your most obedient servant,

Chunorauha

24/11

For Secretary to Government,
Development Departments.

1/6

TELEGRAPHIC ADDRESS :- "INDUSCOM."

In reply please refer to

No. D4-2359/27-28.

GOVERNMENT OF MYSORE.
DEPARTMENT OF INDUSTRIES AND COMMERCE.

20 FEB. 1929
DEVELOPMENT BRANCH
OFFICE OF THE DIRECTOR,

Dated, Bangalore, 18th February. 1929.

6 FEB. 1929

C. RANGANATHA RAO SAHIB, Esq., B.A., B.L.,

Director of Industries and Commerce in Mysore,
(Bangalore, India.)

To

N. Rama Rao, Esq., B.A., B.L.,
Secretary to the Government of Mysore,
Development Departments, Bangalore.

SIR,

Seri 52-28-5

N
With reference to your letter No. D.5554/Seri 52-28-2 dated the 28th November 1928 calling for a report of action taken on the several points referred to in the letter received from Mr. K. Shamsuddin Khan in Japan, I have the honour to submit herewith for information of Government, copy of letter No. 3134 dated the 27th December 1928 received from the Superintendent of Sericulture, Mysore, intimating the action taken.

Further information has been called for from Mr. Shamsuddin Khan by the Superintendent of Sericulture and this will be submitted as soon as it is received in this office.

I have the honour to be,

Sir,

Your most obedient Servant,

C. Ranganatha Rao Sahib
Director.

AKM.

mere

21

DEPARTMENT OF SERICULTURE

MYSORE STATE

3134
MR. H. S. GOVINDA RAO, B.A.
Tel. Address—"SERI"

OFFICE OF THE SUPDT. OF SERICULTURE IN MYSORE,
EXHIBITION BUILDINGS.

Mysore, 25th/December 1928.

FROM

H. S. GOVINDA RAO, Esq., B.A.,

Superintendent of Sericulture in Mysore,

MYSORE.

TO

C. Ranganatha Rao Sahib, Esq., B.A., B.L.,

Director of Industries and Commerce in Mysore,

Bangalore.

SUBJECT AND REFERENCE—

SIR,

With reference to your No. D4-2359/27-28 dated 6th December 1928 forwarding to me copy of letter No. D. 5554/Seri.52-28-2 dated 28th November 1928 received from the Development Secretary to Government, I have the honour to state as follows:-

- Item No. 1. - I have requested Mr. K. Shamsuddin Khan to send me more information regarding the use of copper sulphate on mulberry leaves in Japan. In the meanwhile I have arranged to try copper sulphate on a small area in the mulberry garden attached to the Mysore Farm to find out if mildew or Boodi-Roga can be eliminated by the use of copper sulphate. The Sericultural Probationer, Mr. T.K. Krishna Murthy is attending to this work.
- Item No. 2. - The Asst. Superintendent of Sericulture in charge of Filature has been requested to attend to this as soon as the domestic basins are installed.
- Item No. 3. - I have requested Mr. K. Shamsuddin Khan to get a plan and detailed description of the stifling chamber as early as possible. I have also requested him to arrange to visit Shanghai and Canton on his return journey to India so that he may study the conditions in China.

I have the honour to be,
Sir,
Your most obedient servant,

W. T. Krishna Rao
Superintendent.

TR.

TELEGRAPHIC ADDRESS:— "INDUSCOM."

In reply please refer to

No. D. 2359/27-28

En: one

GOVERNMENT OF MYSORE

DEPARTMENT OF INDUSTRIES AND COMMERCE.

20 FEB. 1929

DEVELOPMENT BRANCH.

OFFICE OF THE DIRECTOR.

Dated, Bangalore, 18th February, 1929.

9 FEB. 1929

FROM

C. RANGANATHA RAO SAHIB, Esq., B.A., B.L.,

Director of Industries and Commerce in Mysore,
(Bangalore, India.)

To

N. Rama Rao, Esq., B.A., B.L.,
Secretary to the Government of Mysore,
Development Department, Bangalore.

SIR,

Seri 52-28-6

N
With reference to your letter No.D.5554/Seri 52-28-2 dated the 28th November 1928, I have the honour to submit herewith for the information of Government, copy of brief report of work done by Mr. K. Shamsuddin Khan, Assistant Superintendent of Sericulture on deputation, during the period 16-10-28 to 15-11-1928 - received with the Sericultural Superintendent's letter No.3125 -- dated the 27th December 1928.

Subd for perusal

I have the honour to be,

Sir,

Your most obedient Servant,

C. Ranganatha Rao Sahib
DIRECTOR.

mae

AKM.

213

Letter No. 33 dated 18-11-1928 from Mr. K. Shamsuddin Khan, B.A. Asst. Superintendent of Sericulture (on Deputation), Koto Sanshi Gakko, Nishigahara, Tokyo, Japan, to the Superintendent of Sericulture in Mysore, Mysore.

I submit herewith a brief diary of work done by me from 16-10-28 to 15-11-28 for favour of information.

Brief Diary of work done by Mr. K. Shamsuddin Khan from
16-10-28 to 15-11-28.

During the above period I worked in Pathological and Genetical Laboratories of Koto Sanshi Gakko under Professor Tateiwa.

The work done concerned mainly with theoretical and practical work in Bacteriology and Chromosomes. Permanent preparations were made for purposes of preservation of Bacteria. Preparations of silk-worm testes were made for Chromosome work. Microtome sections were made, fixed, and stained according to methods described in my previous diary. More than one thousand sections were examined in great detail under the microscope for purposes of counting the number of chromosomes in silk-worm in fully developed stages as well as in preliminary stages. The number of chromosomes counted was identified to be the same as found out by other workers on the subject. The various processes of 'Reduction' and 'Mitosis divisions' were carefully studied under the microscope.

Besides this, theory of micro-photography was studied. A few exposures were made and photographs taken..

Method. - The object to be photographed is to be first properly focussed under the 'Oil immersion' lense reflecting light from an incandescent carbon-pole lamp. The vertical camera is then fitted to the microscope and the image set properly to the plane required for photography. The trial graduated plate is then introduced and a trial exposure is made with reference to a given time. The plate is then removed and developed and fixed. On the trial plate the best image is found out and the corresponding indicating number denotes the time of multiplication factor. The time of exposure being determined a chromatic plate is then substituted and exposed for the time found out by the above method. It is then removed, developed, fixed, and photographs printed.

This photographic work differs from the ordinary work in its great care, determination of time, and a slight change in the use of developes, fixing agents, and printing papers and plates. The work is also more minute. It is a matter for great regret that on the night of the 12th instant the big genetical and silk-worm rearing laboratories were burnt down to ashes. Consequently the work in College suffered from the 12th onwards and is likely to be affected for sometime more.

A little modification will be made in my detailed programme of work only without affecting the general programme of training in view of the situation caused by the fire in the laboratories.

Sd/- K. Shamsuddin Khan,
Asst. Supdt, of Sericulture on
Deputation in Japan.

Copy submitted to the Director of Industries and Commerce in Mysore, Bangalore, for favour of information.

Superintendent of Sericulture.

GOVERNMENT OF MYSORE.

In reply please refer to

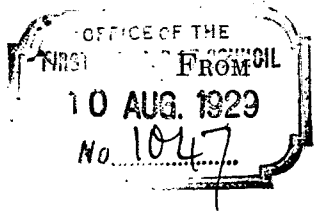
No. D4.2359/27-28

Enc. one.

DEPARTMENT OF INDUSTRIES AND COMMERCE.

OFFICE OF THE DIRECTOR,

Dated, Bangalore, ...8th August.....1929.



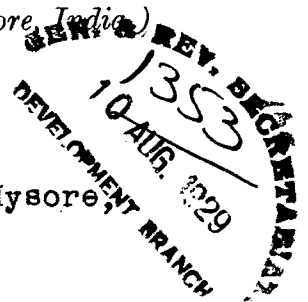
C. RANGANATHA RAO SAHIB, Esq., B.A., B.L.,

Director of Industries and Commerce in Mysore,

(Bangalore, India)

To

N. RAMA RAO, Esq., B.A., B.L.,

Secretary to the Government of Mysore,
Development Departments,
Bangalore.

SIR,

A

With reference to your letter No: D. 7646/Seri. 52-28-4

dated the 25th January 1929, requesting me to obtain further reports

from Mr. K. Shamsuddin Khan, on the several points referred to in

your letter, I have the honour to submit for the information of

Government a copy of the further Report received from Mr. K.

Shamsuddin Khan, with his D.O.No:24 dated 1-6-1929 to the Superinten-

dent of Sericulture.

I have the honour to be,

Sir,

Your most obedient servant,

Ranganatha Rao Sahib

DIRECTOR.

D.S.

Subs for info
The report is very interesting.
After Mr Shamsuddin Khan
returns, we might have a
set of 10 basins of the Japanese
type setup, with regulation
reels (having re-reeling)
& compare its performance
with that of the Mysore Basin
& French Basin sets.

(1st Member)

UR

9 8 29

A Please see this letter - me
let me see this letter - me

UR

D.S.

12 8 29

11 8 29

2✓

D.O. No. 24 dated 1-6-1929 from Mr. K. Shamsuddin Khan, B.A., Asst. Superintendent of Sericulture (on deputation), C/O The Indo-Japanese Association, Tokyo, Japan, to the Superintendent of Sericulture in Mysore, Mysore.

With reference to your letter No. 4978 dated 15-4-29 enclosing observations of Government on the reports of August and September 1928 I submit herewith a note as required.

Regarding the use of Mercury Lamp I am to state that it is not yet in use in filature. But one of the filatures has adopted the chemical test (please see my report for August and September), and I have to study it in detail at Ueda Sericultural College as neither Tokyo Sericultural College nor Kumagaya Experimental Station have these apparatus. But I shall send you full information after I go to Ueda. I regret I am unable to immediately submit a note. Dr. Inon~~keye~~ will certainly oblige us in this respect.

With regard to cold chambers in the body of the note I have furnished the essential information. This is the most up to date information.

" C O P Y."

H. S. K. S.
Superintendent of Sericulture.

TR.

✓
23/7/29

Copy of the report received from Mr. K. Shamsuddin Khan, B.A., Asst. Superintendent of Sericulture (on deputation), C/O Indo-Japanese Association, Tokyo, Japan, with his D.O. No. 24 of 1-6-1929.

Report regarding observations by Government on the work diary for the months of August and September 1928.

II. The Japanese Basin to which reference is made in the report is the basin pertaining to Filature and not to the individual basin for domestic use. The basin used in Japanese Filatures is simple. I give below a description of the Japanese Basin used in Filatures. The reeling basin is made of some metal and is usually enamelled. So also the reserving pan or the pan in which the cocoons for reeling are kept by the side of the reeling basin. The unit has no cooking pan attached to it as cooking is done in a separate place. There is no Jette-Boutt system as largely 'Button' reeling system is adopted. The Croissuer frames are just the same as in Mysore Filature. The travellers' are simple fixtures. A long rod of wood which has the necessary hooks (generally of glass) moves to and fro by an ordinary pulley conveying to it the necessary 'to and fro' motion. The reels on which the silk wound are all of short diameter (8" to 9") and are moved by contact drum wheel motion as in Mysore Filature, each basin having its independent break. Generally a reeler attends to six ends. The reels are mounted on simple wooden frames. The reeling basins, reserving pans, water and steam taps and exit tubes are all fitted in masonry work generally in wire cut bricks and cement. Steam ^{is} power used both for motion and for heating purposes. The simplicity of the Japanese Filature basins consists in dispensing with all the heavy iron supports both for reeling basins and for reels, and in dispensing with the 'cooking basins and brushes', and the heavy appliances connected therewith and in the absence of Jette-Boutt system. The 'Travellers' are simple and have a simple to and fro motion. Re-reeling is an indispensable step in Japanese Filatures. The Jette-Boutt system in Mysore Filatures, so long as there is not plenty of well trained available number of reelers in 'Button System,' is necessary.

'The Mysore Domestic Basin' was designed not for filature purposes but was for domestic installations and there is no comparison between

between the Japanese Basin (Filature) and the Mysore Domestic Unit. For technical and practical advantages there is absolutely no parallel of it. My report dealt with Filature Basins and not with domestic units. The one useful purpose ^{is} that it may serve as a model in future filature installations in Mysore. After making enquiries in manufacturing companies in Tokyo I shall furnish the quotations in about a week.

III. I discussed both with European and Japanese manufacturers of silk-waste machinery. Messrs. Leybold Shokwan a German importing firm of reputation here told me that a normal plant, i.e., a plant with 300 spindles capacity would cost about Y. 40,000. Messrs. Osaka Kika Company have as yet not furnished their estimates. However, their machinery catalogue ^{is} ~~as~~ enclosed herewith for reference. Both these well known and reliable manufacturers decline to undertake manufacture of a plant of less capacity than that of 300 spindles.

IV. Regarding details about mercury lamp tests and chemical tests I shall furnish them after I work in Ueda Sericultural College. I am at present working in Kumagaya Experimental Station.

V. The cold storage plants have generally an 'Ammonia' plant for cooling. The chambers are of masonry and non-conducting material. From the memory I have of the plant which was to be purchased I am not in a position to say definitely whether that plant is good, but in any case the chambers here are certainly better as permanent installations and temperature can be maintained very uniform. Moreover large quantities of cocoons and layings can be stored. The maintenance of uniform temperature is the most important thing with regard to cold storage of 'Multivoltine layings' with a view to delay hatching next to the time of depositing in chambers after laying.

For the multivoltines, the best temperature is 40°F (uniform). The layings should be deposited between 12-15 hrs. after the moths deposit them. Delayed depositing would bring about irregular results. The chambers should have a humidity percentage of 80

to 90. These conditions can better be realised in a solid permanent chamber than in an ordinary type storage. The temperatures, humidity, and timings given ^{above} ~~below~~ are the ~~worst~~ most up-to-date results of experiments in Japan. Perhaps it may be necessary to find out suitable units for Mysore. Another point with regard to cold-storage layings is the temperature at which the layings should be kept after removal from cold storage. The best temperature is 72° to 73°F. This necessitates having an incubation chamber where the temperature can be regulated to the desired degree by suitable means, such as electrical energy passing through heating-coils. Multivoltine layings can be kept for thirty days but twenty days is a good limit. Eggs whose hatching is delayed by thirty days do not hatch well and worms suffer.

VII. Humidity and temperature are regulated in Experimental Stations where Physiological experiments are carried by having machine plant for draft of air and for spraying of water. But in ordinary cases simple stoves are used in underground hearths provided with draft chimney and water is sprinkled for increasing humidity. In some cases steam heating apparatus is installed. For a proper circulation of air in ordinary rearing houses one or two zinc chimneys are installed in the roofing. The Chimney is 15" in diameter and about 10' to 15' ⁱⁿ height. At the top the zinc cylinder has a revolving fan which moves by wind and facilitates exhaust of air of the room and at the bottom is a lid which can be opened or shut by means of a string to the desired extent. This contrivance though simple works very satisfactorily.

VIII. There is no simple and inexpensive plant which can be owned by Mysore Domestic Reelers. The unit manufactured in Mysore is far too superior and advantageous to be displaced. But in the case of filatures installations and fixtures are cheaper.

IX. Flacherie as I have already reported is a disease mainly caused by Physiological disturbances and the fall in the value of P.H. in the stomach of the silk worm. Bacteria of Megatherian

Thank you
WR

group, and Coli group, etc.. are only secondary causes. Bacillus Sotro is certainly not the cause of Flacherie. The preventive measures reduce themselves to treating the primary cause, viz. to keep the stomach conditions of the silk-worm "stable". The measures are use of suitable and proper leaf during rearing, regulation of humidity and temperature, and selection of suitable seed, careful treatment during "moult". Flacherie is by no means a hereditary disease in the sense ^{in which} pébrine is, but the seed of flacherie suffering moths are weak and consequently physiological disturbances are easily set up causing flacherie.

Experimental Station,
Kumagaya (Saitama. Ken),
J a p a n.
1st June 1929.

Sd/- K. Shamsuddin Khan,
Asst. Supdt. of Sericulture
on deputation.

" C O P Y . "

K. Shamsuddin Khan
Superintendent of Sericulture.

TR.

k.
23/7/29

SUBJECT.....

Diary No. of letter replied to.....

General and Revenue Secretariat

the

192

Date of issue.....

8-11-29

Signed by.....

M. B. J. 288

List of enclosures....

Copied by

Examined by

Section *Peri.*

File No. 52-28.

Serial No. 8

No.

24551

To

The Director of P. & R.

Sir,

With reference to
your letter no. D. 235, 9,
dated 8th August '29,
submitting his report
of Mr. K. Shanmudhan Khan
on the points referred to
in his office letter no.
D. 2646 Ser. 52-28-4
of 25th January 1929, I
am directed to state that
Govt. have read his report
with interest. After the

over

71

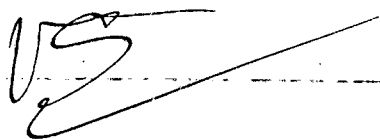
Shamuddin Khan returns
to duty, ^{may} ~~has~~ ~~might~~ ~~arrange~~ to
have a set of ten basins of the
Japanese type set-up with
regulation racks (to avoid
re-reeling) and compare its
performance with that of the
Myers Basin and French Basin sets.

I have 4

by 9/11/29

For 5 Ser.

18.2.9.29




29.10.29